

Amendment to the Claims:

1 (currently amended): A method of calculating a switching threshold delay and a slope delay for a gate input signal of a cell Thevenin parameters comprising [[the]] steps of:

(a) initializing estimates of a first effective capacitance capacitances  $C_{eff1}$ , of a second effective capacitance [[and]]  $C_{eff2}$ , of a switching threshold delay  $t_0$ , and of a slope delay  $\delta t$  for a gate input signal of a cell; [[and]]

(b) solving ramp response equations for a capacitive load and a driver resistance to calculate solutions for  $t_0$  and  $\delta t$  as a function of the first effective capacitance  $C_{eff1}$  for a rising or falling transition voltage of the gate input signal and as a function of the second effective capacitance  $C_{eff2}$  for fifty percent of a final transition voltage of the gate input signal;

(c) if the calculated solutions for  $t_0$  and  $\delta t$  have converged to the estimates of  $t_0$  and  $\delta t$  within a desired accuracy, then continuing from step (e), else continuing from step (d);

(d) replacing the estimates of  $t_0$  and  $\delta t$  with the calculated solutions for  $t_0$  and  $\delta t$ , respectively, and continuing from step (b); and

(e) generating as output the calculated solutions for the switching threshold delay  $t_0$  and the slope delay  $\delta t$  for the gate input signal of the cell.

2-4 (canceled)

5 (currently amended): The method of Claim 1 [[3]]

further comprising the step of (f) calculating a solution for a first delay delay1 to the rising or falling transition voltage of the gate input signal as a function of the estimate of the first effective capacitance Ceff1 t30(Ceff1) or t70(Ceff1) and a solution for a second delay delay2 to fifty percent of the final transition voltage of the gate input signal as a function of the estimate of the second effective capacitance Ceff2 t50(Ceff2) from a Foster or a pi model.

6 (currently amended): The method of Claim 5 further comprising the step of (g) comparing the delays delay1 and delay2 to delays delay1' and delay2' respectively, wherein the delays delay1' and delay2' are estimated from a function of input ramptime and capacitance corresponding to the estimates of the effective capacitances Ceff1 and Ceff2, respectively in a delay lookup table.

7 (currently amended): The method of Claim 6 further comprising the step of (h) replacing the estimates of the effective capacitances Ceff1 and Ceff2 with finding new values for Ceff1 and Ceff2 from the function of input ramptime and capacitance a reverse lookup of delay1 and delay2 in the delay lookup table if the delays delay1 and delay2 have not converged to the delays delay1' and delay2' within a desired accuracy.

8 (canceled)

9 (currently amended): The method of Claim 7 [[8]] further comprising the step of (i) [[(j)]] repeating steps (b) through (h) [[(i)]] until the delays delay1 and delay2 converge to the delays delay1' and delay2' within a desired accuracy.

10 (currently amended): A computer program product comprising:

a medium for embodying a computer program for input to a computer; and

a computer program embodied in the medium for causing the computer to perform steps of at least one of the following functions:

(a) initializing estimates of a first effective capacitance capacitances  $C_{eff1}$ , of a second effective capacitance [[and]]  $C_{eff2}$ , of a switching threshold delay  $t_0$ , and of a slope delay  $\delta t$  for a gate input signal of a cell; [[and]]

(b) solving ramp response equations for a capacitive load and a driver resistance to calculate solutions for  $t_0$  and  $\delta t$  as a function of the first effective capacitance  $C_{eff1}$  for a rising or falling transition voltage of the gate input signal and as a function of the second effective capacitance  $C_{eff2}$  for fifty percent of a final transition voltage of the gate input signal;

(c) if the calculated solutions for  $t_0$  and  $\delta t$  have converged to the estimates of  $t_0$  and  $\delta t$  within a desired accuracy, then continuing from step (e), else continuing from step (d);

(d) replacing the estimates of  $t_0$  and  $\delta t$  with the calculated solutions for  $t_0$  and  $\delta t$ , respectively, and continuing from step (b); and

(e) generating as output the calculated solutions for the switching threshold delay  $t_0$  and the slope delay  $\delta t$  for the gate input signal of the cell.

~~(e) comparing the estimates of  $t_0$  and  $\delta t$  with solutions for  $t_0$  and  $\delta t$  found in step (b);~~

~~(d) replacing the estimates of  $t_0$  and  $\delta t$  with~~

~~the solutions for  $t_0$  and  $\Delta t$  if the solutions for  $t_0$  and  $\Delta t$  have not converged to the estimates of  $t_0$  and  $\Delta t$ ,~~

~~(e) repeating steps (b), (c), and (d) until the solutions for  $t_0$  and  $\Delta t$  converge to the estimates of  $t_0$  and  $\Delta t$ ,~~

~~(f) calculating a  $\text{delay}_1$  as a function of  $t_{30}(\text{Ceff}_1)$  or  $t_{70}(\text{Ceff}_1)$  and a  $\text{delay}_2$  as a function of  $t_{50}(\text{Ceff}_2)$  from a Foster or a pi model;~~

~~(g) comparing  $\text{delay}_1$  and  $\text{delay}_2$  to delays  $\text{delay}'_1$  and  $\text{delay}'_2$  corresponding to  $\text{Ceff}_1$  and  $\text{Ceff}_2$  in a delay lookup table;~~

~~(h) finding new values for  $\text{Ceff}_1$  and  $\text{Ceff}_2$  from a reverse lookup of  $\text{delay}_1$  and  $\text{delay}_2$  in the delay lookup table if  $\text{delay}_1$  and  $\text{delay}_2$  have not converged to  $\text{delay}'_1$  and  $\text{delay}'_2$ ;~~

~~(i) replacing the estimates of  $\text{Ceff}_1$  and  $\text{Ceff}_2$  in step (b) with the new values for  $\text{Ceff}_1$  and  $\text{Ceff}_2$ , and~~

~~(j) repeating steps (b) through (i) until  $\text{delay}_1$  and  $\text{delay}_2$  converge to  $\text{delay}'_1$  and  $\text{delay}'_2$ .~~

11 (new): The computer program product of Claim 10 further comprising the step of (f) calculating a solution for a first delay  $\text{delay}_1$  to the rising or falling transition voltage of the gate input signal as a function of the estimate of the first effective capacitance  $\text{Ceff}_1$  and a solution for a second delay  $\text{delay}_2$  to fifty percent of the final transition voltage of the gate input signal as a function of the estimate of the second effective capacitance  $\text{Ceff}_2$ .

12 (new): The computer program product of Claim 11 further comprising the step of (g) comparing the delays  $\text{delay}_1$  and  $\text{delay}_2$  to delays  $\text{delay}'_1$  and  $\text{delay}'_2$  respectively, wherein

*delay1'* and *delay2'* are calculated as a function of input ramptime and capacitance corresponding to the estimates of the effective capacitances *Ceff1* and *Ceff2*.

13 (new): The computer program product of Claim 12 further comprising the step of (h) replacing the estimates of the effective capacitances *Ceff1* and *Ceff2* with new values from the function of input ramptime and capacitance if the delays *delay1* and *delay2* have not converged to the delays *delay1'* and *delay2'* within a desired accuracy.

14 (new): The computer program product of Claim 13 further comprising the step of (i) repeating steps (b) through (h) until the delays *delay1* and *delay2* converge to the delays *delay1'* and *delay2'* within a desired accuracy.

15 (new): The computer program product of Claim 14 further comprising the step of (j) generating as output the calculated solution for the first delay *delay1* as a function of the estimate of the first effective capacitance *Ceff1* and the calculated solution for the second delay *delay2* as a function of the estimate of the second effective capacitance *Ceff2*.

16 (new): The method of Claim 9 further comprising the step of (j) generating as output the calculated solution for the first delay *delay1* as a function of the estimate of the first effective capacitance *Ceff1* and the calculated solution for the second delay *delay2* as a function of the estimate of the second effective capacitance *Ceff2*.